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STEM PBL Resources for Educators and Parents

Remote Learning Tools	Format	Sign-up required?	Notes
Educreations	App	Yes	Educreations is an interactive whiteboard and screencasting tool, allowing to annotate, animate, and narrate content.
FlipGrid - Empower every voice	App	Yes but teachers can generate user IDs for students	Students record videos in response to discussion topics
Padlet	Web Platform	No	Virtual sticky-note collaboration tool, and much more!
SeeSaw - Remote Learning	Web app	Yes but teachers can generate user IDs for students	Activities are not dependent on the platform (online research, writing, etc.)
STEM Teaching Tools - Supporting Student's Science Learning (article)	PDF Article	No	
Zoom - Virtual Meeting Tool	Web app	Only for meeting organizer	Meeting time-limit for free accounts has been temporarily removed
General Science/STEM Online Resources	**Format**	**Sign-up required?**	**Notes**
cK-12 - Teacher version	Web platform	Yes for teachers to set up classrooms	Can be linked with many other LMS services
cK-12 – Student version (K-12)	Web platform, lessons are primarily text-based with some video content	No, except to be part of a teacher's class	
Data Nuggets – Bring real, scientific data into your classroom	Student activity guides in PDF format	No	Comes with rubrics, divided into difficulty levels, optional video content for further discussion

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MA DESE – Model Curriculum Units	Word documents	No	Lesson plans, rubrics, etc
NASA - STEM Engagement	Website links to web-based content and activity documents.	No	This is specifically NASA-themed content
NSTA – Classroom Resources	PDF lesson and activity plans	No	Not all resources are free
Purdue University – Engineering Resources (PK-12)	Variety	No	Links to a number of other STEM resources divided by type and target age groups
STEM Ecosystems - Resource Library	Variety	No	An ever growing list of STEM resoruces, curated by the STEM Ecosystem Netork
TeachEngineering – STEM Curriculum for K12	Printable/shareable documents with some Youtube videos for activities	No	Units, lessons, and activities all available
TryEngineering! – Engineering Resources for Teachers	PDF lesson plans and handouts	No	Lessons available for a variety of age groups

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Interactive STEM Activities	Format	Sign-up required?	Notes
Concord Consortium – Interactive STEM Activities (K-12)	Web-based activities	Yes	Some activities call for students to upload materials
Design Squad Global – Resources for Teachers and Parents	Videos and activity documents	No	Most activites use common/easily accessible materials
Design Squad Global- Engineering Activities (K-8)	Videos and activity documents	No	
Explore Learning – Simulations (3-12)	Videos, web apps, documents	Yes	Activities divided by grades, subjects, standards, and textbooks
Learning Blade – Activities with Connections to STEM Careers (4-8)	PDFs	No (only for STEM At Home page)	STEM At Home page offers discussion guides and easy at-home activities for families of STEM learners
Microsoft - Hacking STEM Library (6-12, however many need microcontrollers)	Web-based activities and videos	No	Materials and software requirements may be inaccesible
NASA – Fun STEM Activities to do at Home (K-4)	*See above entry about NASA resources*		
Outschool - Educator, Lindsey Nelson has put together a bingo sheet with lots of great STEM activities for students to do at home with limited supplies. (K-8)	STEM activity bingo document - links to some web-based resources. Outschool online classes use video chat	Yes for online classes	Currently offering FREE online classes: Engineering based classes (K-12)
PBS Learning Media – Videos, Simulations (3-12)	Videos (can be downloaded) and web-based, interacticve simulations	No	Alignment with standards is explained for each activity

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pHet – Science Simulations (K-12)	Web-based, downloadable, interactive simulations	No	Available for a range of age groups
Seeds of STEM – Teacher & Parent friendly STEM resources for Preschool Students (PK)	PDF activities	No	
Space Foundation Discovery Center – STEM Lesson Plans (PK-12)	PDF activity plans	No	
Technovation Families - great STEM Challenges to do at home (designed for a typical 4th grade classroom but can be modified up or down)	Videos and downloadable content	Yes	Some required materials are not common to have at home
TryEngineering! – Explore Engineering with Games and Activities (K-12)	Variety - links to other online resources	No	

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Project Based Learning	Format	Sign-up required?	Notes
Buck Institute for Education, My PBL Works:	Videos and planning documents for PBL educators, articles with links to other resources	Yes for activity plans	Not STEM-specific
Problem Based Learning Teacher Resources			
School Closures: Using PBL in Remote Learning			
Beyond the Worksheet Package: PBL Projects to Adapt for Remote Learning (PK -12)			
STEM Projects (K - 12)			
Edutopia - Project Based Learning for Educators	Online articles	No	
High Tech High – Student Projects – PBL Project Ideas (9-12)	Web page	No	Descriptions of past student projects including teacher and student reflections
WPI STEM Education Center	PDF design challenges	No	
Paper Bridge Design Challenge (PK-12)			
Project Transport Design Challenge (PK-8)			
Mitigating the Impact of Natural Hazards Design Challenge (Grades 3, 4, 6, 7)			

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Coding and Computational Thinking	Format	Sign-up required?	Notes
Code.org – Learning computer science when schools are closed (PK-12)	Videos and web platform, options available for smartphones	No (unless you want to save progress)	Code.org also links to a wide range of other suggested online coding resources https://code.org/student/beyondk12
Scratch – Imagine, Program, Share (3-12)	Web platform - an older version of Scratch can be downloaded and run locally	No (unless you want to save progress)	Many online resources and books exist for Scratch activity ideas
Scratch, Jr – Coding for young children (K-2)	App	No (unless you want to save progress)	